



Mr. Brian Waggle Hargis & Associates - Mesa 1640 South Stapley Drive, Suite 209 Mesa, AZ 85204

H&P Project: HA022814-12

Client Project: WQARF / Phoenix, AZ

Dear Mr. Brian Waggle:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 27-Feb-14 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- · Notes and Definitions / Appendix
- · Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal Laboratory Director

Janis Villasreal

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845



2470 Impala Drive Carlsbad, CA 92010 760-804-9678 Phone 760-804-9159 Fax

Hargis & Associates - Mesa Project: HA022814-12

1640 South Stapley Drive, Suite 209Project Number:WQARF / Phoenix, AZReported:Mesa, AZ 85204Project Manager:Mr. Brian Waggle28-Mar-14 10:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
31-F-4-3'	E403005-01	Vapor	27-Feb-14	27-Feb-14
31-F-5-3'	E403005-02	Vapor	27-Feb-14	27-Feb-14
31-F-1-3'	E403005-03	Vapor	27-Feb-14	27-Feb-14
31-F-2-3'	E403005-04	Vapor	27-Feb-14	27-Feb-14
31-F-7-3'	E403005-05	Vapor	27-Feb-14	27-Feb-14
31-F-6-3'	E403005-06	Vapor	27-Feb-14	27-Feb-14

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Volatile Organic Compounds by H&P Method TO-15M SV

H&P Mobile Geochemistry, Inc.

			MIODHE C							
Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
31-F-4-3' (E403005-01) Vapor S	Sampled: 27-Feb-14	Received: 27-I	Feb-14							J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	50	11	19	"	"	"	"	"	"	
Tetrachloroethene	390	25	34	"	"	"	"	"	"	
Ethylbenzene	12	10	22	"	"	"	"	"	"	J
m,p-Xylene	13	12	44	"	"	"	"	"	"	J
o-Xylene	9.2	7.0	22	"	"	"	"	"	"	J
Surrogate: 1,2-Dichloroethane-d4			110 %	67-1		"	"	"	"	
Surrogate: Toluene-d8			93.8 %	75-1		"	"	"	"	
Surrogate: 4-Bromofluorobenzene			90.4 %	56-1	27	"	"	"	"	
31-F-5-3' (E403005-02) Vapor	Sampled: 27-Feb-14	Received: 27-I	Feb-14							J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	49	11	19	"	"	"	"	"	"	
Toluene Tetrachloroethene	49 250		19 34	"	"	"	"	"	"	
		11 25 10								J
Tetrachloroethene Ethylbenzene	250 16	25 10	34	"	"	"	"	"	"	J
Tetrachloroethene	250	25	34 22	"	"	"	"	"	"	
Tetrachloroethene Ethylbenzene m,p-Xylene	250 16 17	25 10 12	34 22 44 22	" "	"	"	"	" "	" "	J
Tetrachloroethene Ethylbenzene m,p-Xylene o-Xylene Surrogate: 1,2-Dichloroethane-d4	250 16 17	25 10 12	34 22 44 22	" " "		"	" " " " " " " " " " " " " " " " " " " "	11 11 11 11	" "	J
Tetrachloroethene Ethylbenzene m,p-Xylene o-Xylene	250 16 17	25 10 12	34 22 44 22	" "	" " " 41 25	" "	"	" " "	" " " " " " " " " " " " " " " " " " "	J

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H&P Mobile Geochemistry, Inc.

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Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
31-F-1-3' (E403005-03) Vapor	Sampled: 27-Feb-14	Received: 27-1	Feb-14							J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	87	11	19	"	"	"	"	"	"	
Tetrachloroethene	630	25	34	"	"	"	"	"	"	
Ethylbenzene	28	10	22	"	"	"	"	"	"	
m,p-Xylene	130	12	44	"	"	"	"	"	"	
o-Xylene	42	7.0	22	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d-	4		106 %	67-14		"	"	"	"	
Surrogate: Toluene-d8			95.1 %	75-12		"	"	"	"	
Surrogate: 4-Bromofluorobenzen	e		88.9 %	56-12	27	"	"	"	"	
31-F-2-3' (E403005-04) Vapor	Sampled: 27-Feb-14	Received: 27-1	Feb-14							J- Report
1,1-Dichloroethene	ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
trans-1,2-Dichloroethene	ND	8.9	40	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	10	40	"	"	"	"	"	"	
Benzene	ND	10	16	"	"	"	"	"	"	
Trichloroethene	ND	19	27	"	"	"	"	"	"	
Toluene	50	11	19	"	"	"	"	"	"	
Tetrachloroethene	570	25	34	"	"	"	"	"	"	
Ethylbenzene	ND	10	22	"	"	"	"	"	"	
m,p-Xylene	24	12	44	"	"	"	"	"	"	J
o-Xylene	13	7.0	22	"	"	"	"	"	"	J
Cumpo ata 12 Diahlamathan J	14		108 %	67-14	41	"	,,	"	"	
Surrogate: 1,2-Dichloroethane-d- Surrogate: Toluene-d8	4		96.1 %	6/-14 75-12		,,	,,	"	"	
Surrogate: 4-Bromofluorobenzen	a		90.1 % 95.4 %	56-12		"	,,	"	"	
Surroguie. 4-Bromojiuorobenzeni	e		93.4 70	30-12	٠,					

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Volatile Organic Compounds by H&P Method TO-15M SV

H&P Mobile Geochemistry, Inc.

Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
led: 27-Feb-14	Received: 27-F	eb-14							J- Report
ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
ND	8.9	40	"	"	"	"	"	"	
ND	10	40	"	"	"	"	"	"	
ND	10	16	"	"	"	"	"	"	
ND	19	27	"	"	"	"	"	"	
53	11	19	"	"	"	"	"	"	
970	25	34	"	"	"	"	"	"	
ND	10	22	"	"	"	"	"	"	
22	12	44	"	"	"	"	"	"	J
11	7.0	22	"	"	"	"	"	"	J
		111 %	67-14	11	"	"	"	"	
		95.6 %			"	"	"	"	
		87.8 %	56-12	27	"	"	"	"	
led: 27-Feb-14	Received: 27-F	eb-14							J- Report
ND	6.4	20	ug/m3	1	EC40405	04-Mar-14	04-Mar-14	TO-15	
ND	8.9	40	"	"	"	"	"	"	
ND	10	40	"	"	"	"	"	"	
ND	10	16	"	"	"	"	"	"	
ND	19	27	"	"	"	"	"	"	
52	11	19	"	"	"	"	"	"	
880	25	34	"	"	"	"	"	"	
ND	10	22	"	"	"	"	"	"	
20	12	44	"	"	"	"	"	"	J
9.2	7.0	22	"	"	"	"	"	"	J
		102 %	67-1/	11	"	"	"	"	
						,,	"	,,	
		102 %	75-12	75	"	"	"	"	
	ND ND ND S3 970 ND 22 11 ND ND ND ND S6 ND	ND 6.4 ND 10 ND 10 ND 19 53 11 970 25 ND 10 22 12 11 7.0 ND 8.9 ND 10 22 12 11 7.0	ND 6.4 20 ND 10 10 ND 10 16 ND 19 27 53 11 19 970 25 34 ND 10 22 22 12 44 11 7.0 22 111 % 95.6 % 87.8 % ND 8.9 40 ND 10 10 22 21 12 11 19 ND 10 10 10 ND 10 22 111 10 22 111 10 40 ND 10 22 111 10 40 ND 10 40 ND 10 40 ND 10 10 40 ND 10 10 40 ND 10 10 16 ND 10 10 16 ND 19 27 52 11 19 880 25 34 ND 10 22 20 12 44	ND 6.4 20 ug/m3 ND 10 40 " ND 10 10 40 " ND 19 27 " 53 11 19 " 970 25 34 " ND 10 22 " 22 12 44 " 11 7.0 22 " ND 8.9 40 " ND 10 10 10 " ND 10 22 " 21 11 19 " ND 6.4 20 ug/m3 ND 8.9 40 " ND 10 40 " ND 10 10 40 " ND 10 22 " 21 11 19 " 22 12 44 " 23 14 11 19 " 24 11 7.0 22 " 25 11 19 " 26 11 19 " 27 10 10 10 10 10 10 10 10 10 10 10 10 10	ND 6.4 20 ug/m3 1 ND 10 40 " " ND 10 10 16 " " ND 19 27 " " 53 11 19 " " 970 25 34 " " ND 10 22 " " 111 7.0 22 " " 111 8.9 40 " " 111 95.6 % 75-125 87.8 % 56-127 112 44 " " ND 10 40 " " ND 10 10 22 " " 113 ND 10 10 10 10 10 10 10 10 10 10 10 10 10	ND	ND 6.4 20 ug/m3 1 EC40405 04-Mar-14 ND 10 40 " " " " " " " " " " " " " " " " " "	ND	ND

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RPD

Hargis & Associates - Mesa

Mesa, AZ 85204

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Project Number: WQARF / Phoenix, AZ

Spike

Reported: Project Manager: Mr. Brian Waggle 28-Mar-14 10:39

%REC

Source

Volatile Organic Compounds by H&P Method TO-15M SV - Quality Control **H&P Mobile Geochemistry, Inc.**

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EC40405 - TO-15										
Blank (EC40405-BLK1)				Prepared &	Analyzed:	04-Mar-14				
1,1-Dichloroethene	ND	20	ug/m3							
trans-1,2-Dichloroethene	ND	40	"							
cis-1,2-Dichloroethene	ND	40	"							
Benzene	ND	16	"							
Trichloroethene	ND	27	"							
Toluene	ND	19	"							
Tetrachloroethene	ND	34	"							
Ethylbenzene	ND	22	"							
m,p-Xylene	ND	44	"							
o-Xylene	ND	22	"							
Surrogate: 1,2-Dichloroethane-d4	961		"	886		108	67-141			
Surrogate: Toluene-d8	781		"	864		90.3	75-125			
Surrogate: 4-Bromofluorobenzene	1390		"	1530		90.8	56-127			
LCS (EC40405-BS1)				Prepared &	z Analyzed:	04-Mar-14				
1,1-Dichloroethene	200	20	ug/m3	202		99.1	65-135			
trans-1,2-Dichloroethene	190	40	"	202		93.3	65-135			
cis-1,2-Dichloroethene	200	40	"	202		99.3	65-135			
Benzene	160	16	"	162		96.2	65-135			
Trichloroethene	300	27	"	272		111	65-135			
Toluene	180	19	"	191		95.5	65-135			
Tetrachloroethene	370	34	"	345		106	65-135			
Ethylbenzene	210	22	"	220		96.8	65-135			
m,p-Xylene	480	44	"	440		109	65-135			
o-Xylene	250	22	"	220		112	65-135			
Surrogate: 1,2-Dichloroethane-d4	994		"	886		112	67-141			
Surrogate: Toluene-d8	822		"	864		95.2	75-125			
Surrogate: 4-Bromofluorobenzene	1570		"	1530		103	56-127			

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Notes and Definitions

J- Report This sample is reported to standard MDL determined for this method. All confirmed hits above the reported MDL value and

below the RL, will be flagged with a "J" result. If an MDL is not listed, the analyte is ND at the RL.

J Detected but below the RL/LOQ; therefore, result is an estimated concentration.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory (Certification # L11-175) in accordance with the DoD-ELAP program. H&P is approved by the State of Arizona under Certification Numbers AZM758 and AZ0779. H&P is approved as an Environmental Laboratory in conformance with the Environmental Laboratory Accreditation Program (CA) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste for the following methods:

Certificate# 2741, 2743, 2579, 2754 & 2740 approved for EPA 8260 and LUFT GC/MS Certificate# 2742, 2745, & 2741 approved for LUFT Certificate# 2745 & 2742 approved for EPA 418.1

H&P Mobile Geochemistry, Inc. is approved as an Environmental Laboratory in conformance with the National Environmental Accreditation Conference Standards for the category Environmental Analysis Air and Emissions for the following analytes and methods:

Hexachlorobutadiene by EPA TO-15 & TO-14A 1,2,4-Trichlorobenzene by EPA TO-15 & TO-14A 1.2-Dichlorobenzene by EPA TO-15 & TO-14A Dichlorotetrafluoroethane by EPA TO-14A 1,4-Dichlorobenzene by EPA TO-15 & TO-14A Benzene by EPA TO-15 & TO-14A Chlorobenzene by EPA TO-15 & TO-14A Ethyl benzene by EPA TO-15 & TO-14A Styrene by EPA TO-15 & TO-14A Toluene by EPA TO-15 & TO-14A Total Xylenes by EPA TO-15

1,1,1-Trichloroethane by EPA TO-15 & TO-14A 1,1,2,2-Tetrachloroethane by EPA TO-15 & TO-14A

1,1,2-Trichloroethane by EPA TO-15 & TO-14A

1,1-Dichloroethane by EPA TO-15 & TO-14A

1,1-Dichloroethene by EPA TO-15 & TO-14A 1,2-Dichloroethane by EPA TO-15 & TO-14A

1,2-Dichloropropane by EPA TO-15 & TO-14A

Benzyl Chloride by EPA TO-15 & TO-14A

Bromoform by EPA TO-15

Bromomethane by EPA TO-15 & TO-14A

Carbon tetrachloride by EPA TO-15 & TO-14A

Chloroethane by EPA TO-15 & TO-14A

Chloroform by EPA TO-15 & TO-14A Chloromethane by EPA TO-15 & TO-14A

cis-1,2-Dichloroethene by EPA TO-15 & TO-14A

cis-1,3-Dichloropropene by EPA TO-15 & TO-14A

Methylene chloride by EPA TO -15 & TO-14A

Tetrachloroethane by EPA TO-15 & TO-14A trans-1,2-Dichloroethene by EPA TO-15

trans-1,3-Dichloropropene by EPA TO-15 & TO-14A Trichloroethene by EPA TO-15 & TO-14A

Vinyl chloride by EPA TO -15

2-Butanone by EPA TO-15

4-Methyl-2-Pentanone by EPA TO-15

Hexane by EPA TO-15 Methyl tert-butyl ether by EPA TO-15

Vinyl acetate by EPA TO-15

This certification applies to samples analyzed in summa canisters

1,3-Dichlorobenzene by EPA TO-15 & TO-14A Trichlorofluoromethane by EPA TO-14A Nanhthalene by H&P SOP TO-15/GC-MS 1,2-Dibromoethane (EDB) by EPA TO-15 & TO-14A 1,2-Dibromo-3-chloropropane by EPA TO-15 1,3-Butadiene by EPA TO-15 1,1,2-Trichlorotrifluoroethane by EPA TO-14A Carbon disulfide by EPA TO-15 1,4-Dioxane by EPA TO-15

2470 Impala Drive, Carlsbad, CA 92010 & Field Office - Signal Hill, CA W handpmg.com Einfo@handpmg.com P 760.804.9678 F 760.804.9159

VAPOR / AIR Chain of Custody

DATE: 2/87 LIM	Page of
2	

	Lab	Client and	Project	Information		:					Sample	8	eipt (Lab	Use Only)	S	
Lab Client/Consultant: Harqis	r Associa	tes		Project Name / #:	HAOSSYIL	1.805	h7/			Date Rec'o	∴`	3	Control #:			
lanag	in Waggel	J		_	Multiple Si	sites A	Proentx	42		H&P Proje	X # paic	4022	414	4		l
Lab Client Address: 1640 S.	Stapley	X		,	Are you stay Office Can					Lab Work	* Order #	EHO	300	ls		
Lab Client City, State, Zip. AeSc	۱ ۵			2品	MANTEN	GCOM				Sample In	Intact:		No S	Notes	Below	
Phone Number: 480-345	- 0888 x	265								Receipt Gauge	Gauge ID:	11167		Temp:	7	
Reporting Requirements	ents	J.	Turnaround	l Time	Sam	Sampler Inform	Information			Outside	Lab:					
Standard Report Level III	☐ Level IV	кер 2-5 💢]	Stnd	24-Hr Rush	Sampler(s): D	Petros	الم نح			Receipt	Receipt Notes/Tracking #:	king #:				
Excel EDD Other EDD:		3-day Rush	ush	Mobile Lab	Signature: 7	N		^								
CA Geotracker Global ID		☐ 48-Hr F	Rush	Other	Date: 3/2	世上								Lab PM Initials:	tials:	
Instructions to Labo ck if Project Analyte List red VOC units (please of		ontact B BTEX, PCE	BOYNE CE, TCE	for And, CIS 12 DC	TRANSIZE TRANSIZE	IIDC SPATE	Th Ch Th tsill lin	0-15 Project List	21-0 m71-01 □ 31-	m31-OT	Fractions	· · · · · · · · · · · · · · · · · · ·		SN □	ENE	
Andd I I bhna	Allidd			1074 7	CONTAINER			HisiJ.	1 🗌	_ u s	itehqi	Comp			3N <u>-</u>	
SAMPLENAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr dock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Substab (SS), Soil Vapor (SV)	SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINE	Lab use only Receipt Vac VOCs Stand	Χ 85002Λ ΛΟC² 2ΡΟ Ψ □ 85002Λ	Oxygenates Vaphthalene Valene Vaphthalene Valene	269 26 VH T	TPHV as Die: TO-17m Aromatic/Ali NS60SVn	Leak Check	Methane by E	/ W/S	38←	
<u>,</u>		hiltole	0 831	SV	HOOM	3	6			†			┢┈	V		ı
31- F-5-3			2639	8)w00h	. 680	۲.	γ						λ		
63			0839	SS	400m/	986	0	Х						×		
31- F. B. 3			9846	SV	1,700)	الا	5:	Х						Y		
31- F. 7-3			0853	25	1400H	and	که	У						, X		
3/ 5.6.3		-,	961	3	1w00)	153	1.0	X			 			<u> </u>]
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Approved/Relinguished by:	Mari	Company	7	1/1/2/2	Time DAID	S B B B	AT SO	etre	3	Company		200	7/14	Time:		
1	\mathcal{M}	Сотрапу:			Time:	Received by:		0		Company		Date:		Time:		
Approved/Relinquished by:		Company:		Date:	Time:	Received by:				Сотрапу:		Date:		Time:		1
*Approval constitutes as authorization to proceed with analysis and	lysis and acceptance of conditions	ions on back													Rev 12/31/2013	013